Culvert With Professional Engineer Design

Permit Partner Document R1-06

In return for guaranteed processing times, the general permit system has placed the burden of proof on the applicant. This means that you, as the applicant, must provide detailed information with your application that clearly shows that you meet the standards in each rule. The standards are listed in specific rule and are not flexible. If you do not show that your project meets all the standards, you will not be eligible for a general permit.

There are certain requirements that are common to all general permits and there are project specific requirements. The left column shows the legal standard that you are meeting with that information. The information in the right column is what you, as the applicant must provide. As part of your application, you must include any information that shows that you meet these criteria.

Specific Culvert With Professional Engineer Design Project Information

Legal Standard Met	**Plain English**
Culvert placement may not occur in a public rights feature.	Your culvert cannot be placed in a stream location where there is signifigant fish or wildlife habitat that will be impacted by the project. Public rights features determinations will be made by the DNR based on site specific conditions.
Culvert cannot be placed in a lake system	Your project site must be a river or stream. A good site map will show that you meet this condition
The required culvert area may not exceed 40 square feet as calculated using the culvert sizing method in NR 320.	The code includes a method to use to determine the size of the culvert that is needed for the stream at your project site. You must provide information as to how the proposed culvert was sized and it must be less than the specified sizes
Culvert placement shall mimic the natural streambed and gradient above and below the culvert channel. Perched culverts are not in compliance with this condition.	If a culvert is not placed correctly, it can be an obstruction to flow and to fish passage. It is important that the culvert match the existing stream gradient so that it does not cause flooding or obstruct fish movement. This condition should be shown on the plans.
If flow conditions require the use of a multiple culvert arrangement, culverts shall be placed a varying elevations, one in the bed and one 4" to 8" higher, to facilitate base flow and low flows as well as larger rain or snowmelt events.	River channels have a natural low flow area where water moves during dry times. This low flow channel provides fish habitat and other natural stream conditions. A shallow, wider channel can degrade the stream by allowing warmer temperatures, sediment deposition, etc. The lower culvert allows this concentrated low flow channel to remain. This condition can be met through project design and shown on the plans.
Both ends of the culvert shall be installed so a minimum of 4" and a maximum of 8" for a round culvert and 6" for a pipe arch culvert lies below the bed of the waterway.	The round culvert bottom offers less conveyance than the flat stream bottom, and is also a different material. This change could affect habitat, stream flows, etc. To provide a more natural habitat bed and to ensure that the culvert is not perched too high or buried too low, the culvert must be bedded. This condition can be met in the design.
The culvert shall extend at least one foot longer than the road fill. The channel shall be protected with variable-sized riprap extending at least 2 times the culvert diameter or height of arch culvert from the end of the culvert. Riprap placement shall include an adequate filter layer or filter fabric.	We want to make sure that the road fill does not wash into the stream and that the culvert does not cause scour. Your plan should included specific design features showing how wide the road will be and how long the culvert is. You must also show the size of rock you will place on the stream bed and banks and how it will be constructed

Specific Culvert With Professional Engineer Design Project Information

Legal Standard Met	**Plain English**
Culvert inlets may not be capped with screens, bars or any other means which prevent movement of fish or wildlife or collects debris, with the exception of beaver control procedures.	The only thing that can be placed on the ends of the culvert is a beaver control structure.
Clean fill material shall be compacted around the culvert. Multiple culvert crossings shall have a minimum of 2 feet clearance between adjacent culverts to allow adequate compaction of fill material. The culvert shall be designed or protected to prevent crushing	Culverts can crush under traffic weight unless supported by earthen fill. Your plans must show the amount of clean fill that will be compacted around your culvert so that it does not crush.
Dredging and deposition of up to 2 cubic yards of sand, gravel or stone on the streambed may be associated with the placement of a culvert. The dredging must be limited to the volume necessary to bury the culvert as required and the deposit is limited to the area immediately underneath or within 2' of the culvert	In order to correctly place the culvert as conditioned above, a minimal amount of dredging is needed. The area and amount to be dredged should be shown on the plan and the spoil disposal area should be indicated.
Approach fill shall be a maximum of one foot at the bank and 0 feet at 15 feet landward of the bank.	DNR will not be reviewing your project for compliance with local zoning regulations. However, less than 15' of approach fill with a height of less than 1' is generally accepted to not cause a significant backwater problem. Your plan should include project modifications to at least 15' on either side of the culvert.

General Standards Applicable to all GP's

Legal Standard Met	**Plain English**
q On trout steams and perennial tributaries to trout streams, Construction or placement is prohibited between September 15 and May 15 of any year. q On all waterways that are not trout streams, construction or Placement north of Hwy 29 is prohibited between April 1 and June 1 annually. q On all waterways that are not trout streams, construction or placement south of Hwy 29 is prohibited between March 15 and May 15 annually.	You must provide a project beginning and end date that shows no construction during these black-out dates
q Erosion control measures shall meet or exceed the technical standards For erosion control approved by the Dept. under subch. V of ch. NR 151. Any Area where topsoil is exposed during construction shall be immediately seeded And mulched or riprapped to stabilize disturbed areas and prevent spoils from being washed into the waterway.	Your application must show how disturbed areas will be stabilized before and after construction
q If the department determines that a proposal submitted under this section has the potential to impact an endangered or threatened species in accordance with s. 29.604, Stats., the application shall be deemed incomplete. The department may not consider the application complete or issue a general permit until the applicant submits information to demonstrate one of the following: a. that the project either avoids impacts to the threatened or endangered species or b. that the project has received an incidental take authorization under 29.602, Stats. c. If the project is modified, the applicant must submit the revised plan before the application can consider the application complete or issue a general permit.	If there are threatened or endangered species issues at your project site based on a review of our database, your application is "on hold" until you have some type of approval from the Bureau of Endangered Resources
q Unless part of a permanent stormwater management system, all temporary q Erosion and sediment control practices shall be removed upon final site stabilization. q Areas disturbed during construction or installation shall be restored	Silt fence, hay bales or other erosion control measures cannot be left on site once the project is completed

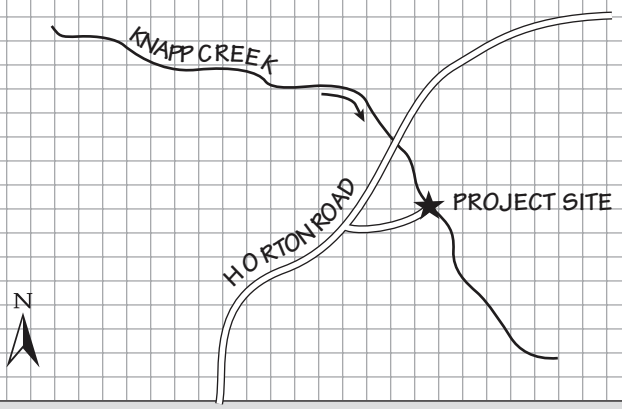
DRAWINGS OF PROPOSED ACTIVITY SHOULD BE PREPARED IN ACCORDANCE WITH SAMPLE DRAWING

Location sketch (indicate scale.)
Show route to project site: include nearest main road and crossroad.

CULVERT SAMPLE DRAWING
WITHOUT ENGINEERED DESIGN

Fire Number _____

Scale: 1"= _____ ft.



Proposed Materials

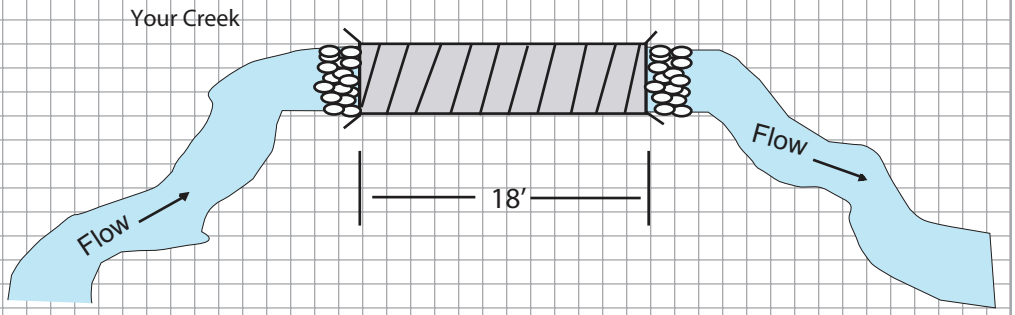
_____
_____
_____
_____
_____
_____
_____

Project Plans. (Include top view and typical cross sections. Clearly identify features and dimensions or indicate scale.)
Use additional sheets if necessary.

N

Scale: 1"= 10 ft.

Top View



Erosion Control Techniques

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_____
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_____

Additional Information

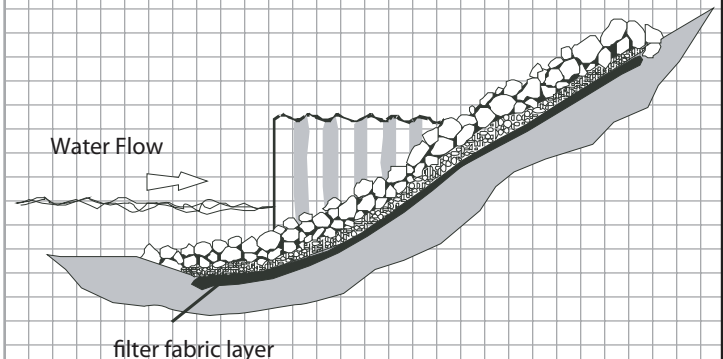
Will the proposed project affect the navigational use of the waterbody? ☐ Yes ☐ No

If "Yes", the following portage will be provided (describe portage: _____

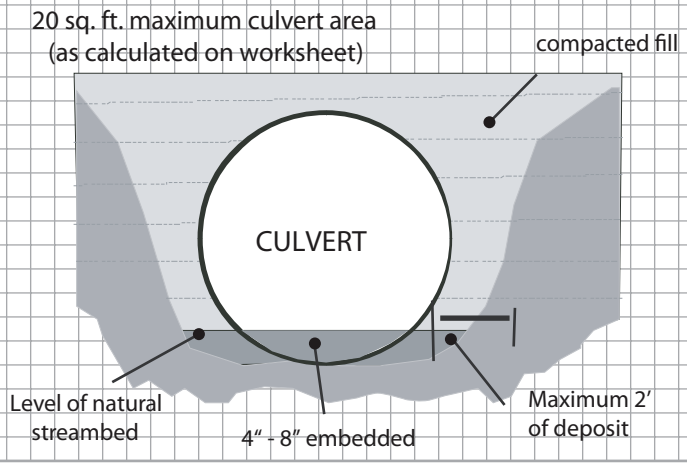
_____

Side View

NOT TO SCALE



Cross Section



DRAWINGS OF PROPOSED ACTIVITY SHOULD BE PREPARED IN ACCORDANCE WITH SAMPLE DRAWING

Location Sketch (Indicate scale.) Show route to project site: include nearest main road and crossroad.

Culvert without professionally engineered design

N

Scale: 1"= _____ft.

Fire Number _____

Proposed Materials

_____

_____

_____

_____

_____

Project Plans. (Include top view and typical cross sections. Clearly identify features and dimensions or indicate scale.) Use additional sheets if necessary.

N

Scale: 1"= _____ft.

Top View

Erosion Control Techniques

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Cross Section

Side View